

1952 Summary of Foodborne, Waterborne, and Other Disease Outbreaks

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IN ADDITION to reporting cases of specified notifiable diseases, State and Territorial health officers are requested to report promptly all outbreaks or unusual occurrences of communicable and other diseases of public health interest. These specifications are a part of the national morbidity reporting system which has evolved through trial and modification. Its most recent revision was unanimously approved by the Association of State and Territorial Health Officers in October 1951, effective January 1, 1952 (1).

Purpose of Epidemic Reporting

The reporting of disease outbreaks is parallel and complementary to the weekly and annual reporting of cases. Whereas reporting of cases provides the data necessary to develop the incidence rates of diseases, which indicate changes in the relative magnitude of disease problems and the resources that should be allocated to control them, epidemic reporting emphasizes the circumstances of specific outbreaks. Its purpose is not so much to count every case but rather to find, through field epidemiological investigation, the sources and vehicles of infection and, if possible, the specific organism involved.

For purposes of controlling disease, it appears more important to know, for example, that

the cook in a summer camp where an outbreak of typhoid fever occurred was discovered to be a typhoid carrier, or that infection was definitely traced to a polluted well, than that 20 rather than 10 cases occurred.

More specifically, investigation of foodborne outbreaks in 1952 repeatedly showed that the importance of properly storing and refrigerating food and of food handlers keeping their hands clean was not appreciated. It follows that expensive restaurant equipment and complicated licensing arrangements seem to be less significant in controlling disease than compliance with relatively simple measures. Food stored promptly in an inexpensive icebox is less likely to spoil than food placed in the most elaborate refrigerator after a few hours' exposure at room temperature. Thus the qualitative details developed in epidemic reports are essential for pointing the way to specific control measures in States and communities. Prompt reporting of unusual occurrences of disease and the circumstances surrounding them are of special importance at the present time as a defense measure against the threat of biological warfare or other catastrophe.

Scope of the Summary

In keeping with the purposes outlined above, this report has been made as extensive as possible. It summarizes all outbreaks and unusual occurrences of disease, with specific exceptions noted below, considered important by the reporting health officers during 1952. This represents a disease base somewhat broader than was

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used in previous outbreak summaries, which were restricted to foodborne and waterborne diseases (2).

Some of this extension was made possible by the addition to the lists of notifiable diseases, on January 1, 1952, of certain diseases not previously reportable on a national basis. Infectious hepatitis, for example, was mentioned in only 2 or 3 reports during 1951; its addition in 1952 apparently focused attention on its widespread occurrence and led to the reporting of 27 outbreaks. This beginning makes it possible to include the disease in the present summary, though it is obvious that in view of the 17,200 individual cases reported full reporting of infectious hepatitis outbreaks was far from being achieved.

Various other diseases, such as ringworm of the scalp and rickettsialpox, which are not specifically included in the lists of those to be reported to the Public Health Service, are nevertheless reportable in many States. To the extent that such reports were forwarded, they are included in this summary for the first time.

In certain instances, information on an outbreak was first obtained from other Federal agencies. For example, a widespread outbreak of salmonellosis in infants, due to ingestion of infected dried egg yolk, was discovered by the Food and Drug Administration. This exchange of information, resulting from cooperative arrangements, is of mutual benefit to the various agencies concerned.

The outbreak of influenza B early in 1952 is not included because it has been described by the Influenza Information Center, National Institutes of Health (3). Although certain other diseases, notably poliomyelitis, occur in localized epidemics, they are excluded because it is not practicable to report them as outbreaks.

Details of nearly all the individual outbreaks covered in this report have appeared currently in the Communicable Disease Summary issued weekly by the National Office of Vital Statistics.

Limitations of Reporting

The tabulation of outbreaks in the accompanying tables shows very clearly that reporting practices differ widely from State to State. The large number of outbreaks reported by some

States as compared with small numbers or none at all in other States undoubtedly reflects superior reporting practices more than differences in occurrence. In many parts of the country the importance of reporting, investigating, and applying control measures to epidemic diseases is evidently not adequately understood. In some States little effort has been made to overcome the considerable time lag in reporting by physicians and local health departments. In others a vigorous promotion effort seems necessary in order to get any reports at all. This problem of overcoming the difficulties in getting unusual disease situations reported, so that investigations may be made, is of concern not only to the Public Health Service and the State health departments, but to the Food and Drug Administration and the Department of Agriculture, and to analogous agencies in State governments.

Figures on numbers of outbreaks, and particularly on numbers of cases, as shown in the tables, should therefore be regarded as indicative of conditions in States with well-developed reporting systems, rather than as a basis for interstate comparisons. Even in States with the most alert reporting systems, the exact cause of outbreaks is sometimes impossible to determine because specimens for laboratory examination cannot be obtained.

Summary of Findings

Outbreaks of waterborne and milkborne diseases in 1952 were confined to a few States, but outbreaks in which food other than milk was the vehicle of infection occurred in all parts of the country. Faulty methods of handling food and improper storage and refrigeration continued to be found on investigation of many outbreaks. These defects were also evident in the reports of outbreaks in 1951 (2).

Despite progress in sanitation and other health measures, there are many persistent communicable diseases that continue to challenge health authorities. For example, staphylococcal food poisoning, salmonellosis, bacillary dysentery, and many diarrheal diseases of unknown etiology remain as common occurrences, and infectious hepatitis appears to be on the increase.

Vehicle of Infection

Water

A somewhat larger number of waterborne outbreaks of disease was reported in 1952 than in 1951, but the number of persons involved (530) was smaller in 1952.

In one outbreak, well water which became polluted as the result of a blocked sewer was the vehicle of typhoid infection; in another, a dug well supplying water to a restaurant was considered to be the source of typhoid infection. Three other outbreaks of typhoid fever were suspected of being waterborne, but definite proof was lacking.

A large outbreak of infectious hepatitis occurred among persons attending a summer camp in which spring water was shown to be polluted. Three weeks prior to the onset of the hepatitis cases, an outbreak of gastroenteritis had occurred among this group. Eight other outbreaks of undifferentiated gastroenteritis were reported in which water was considered to be the vehicle of infection. Five of these involved the use of polluted wells; one was traced to the use of raw creek water; and in another, low water pressure had permitted water fountain outlets to become contaminated.

Milk and Milk Products

Comparatively few of the outbreaks reported in 1952 were traced to milk or milk products. One milkborne outbreak occurred in an institution which used raw milk produced on the premises. *Streptococcus faecalis* of the viridans group was recovered from the milk. A large epidemic of *Shigella sonnei* dysentery occurred in a school using milk from a dairy. Investigation showed that a batch of milk at this dairy was improperly pasteurized immediately preceding the outbreak, but the source of infection of the milk was not determined. In another instance, milk was only suspected of being the vehicle of infection of a group of 100 cases of gastroenteritis in a school.

Milk products were found to be vehicles of infection in only three small outbreaks of disease. One group of 5 persons became ill after eating cheese; another, of 10 persons, after eating ice cream contaminated with *Salmonella montevideo*; and the third, of 7 persons, after

Foodborne and waterborne disease outbreaks, by vehicle of infection, reported in 1952

State	Water		Milk and milk products		Other foods	
	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases
Total.....	14	530	6	833	143	6, 828
Alabama.....						
Arizona.....					1	5
Arkansas.....					4	360
California.....	2	14			29	1, 248
Colorado.....	1	8			1	12
Connecticut.....					4	228
Delaware.....						
District of Columbia.....						
Florida.....					4	92
Georgia.....					1	92
Idaho.....						
Illinois.....	1	50			2	47
Indiana.....						
Iowa.....					2	20
Kansas.....						
Kentucky.....					6	318
Louisiana.....					1	40
Maine.....			1	81		
Maryland.....			1	7	3	103
Massachusetts.....			1	62	9	424
Michigan.....					4	279
Minnesota.....					5	670
Mississippi.....					2	264
Missouri.....					7	368
Montana.....						
Nebraska.....						
Nevada.....						
New Hampshire.....						
New Jersey.....						
New Mexico.....						
New York.....	8	232	1	39	30	1, 007
North Carolina.....					2	16
North Dakota.....						
Ohio.....					6	100
Oklahoma.....						
Oregon.....					5	596
Pennsylvania.....					1	17
Rhode Island.....					1	20
South Carolina.....						
South Dakota.....					2	44
Tennessee.....	2	226	2	644	1	4
Texas.....					1	15
Utah.....						
Vermont.....						
Virginia.....					1	5
Washington.....					1	120
West Virginia.....					3	110
Wisconsin.....						
Wyoming.....					1	16
Alaska.....						
Hawaii.....					3	208

¹ Reported from ship in port city.

Foodborne, waterborne, and other disease outbreaks, by type of infection, reported in 1952

State	Typhoid fever		Salmonellosis		Bacillary dysentery		Trichinosis		Staphylococcal food poisoning		Gastroenteritis, type not stated		Infectious hepatitis		Streptococcal sore throat		Diphtheria	
	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases
Total.....	11	156	31	1,335	12	1,441	5	40	77	3,798	50	2,049	27	1,306	5	363	8	269
Alabama.....													2	59			2	98
Arizona.....									1	5			1	200				
Arkansas.....									3	310	1	50	1	17				
California.....	1	3	5	129	1	37	2	17	13	835	9	274	2	31				
Colorado.....	3	26																
Connecticut.....			1	70					3	158			1	19				
Delaware.....																		
District of Columbia.....			1	2							2	5	2	8				
Florida.....					1	174			4	92			1	11				
Georgia.....	1	11									1	92						
Idaho.....	1	5							1	29								
Illinois.....			1	11							2	86						
Indiana.....							1	15	1	5								
Iowa.....																		
Kansas.....																		
Kentucky.....			2	236					2	78	2	4						
Louisiana.....									1	40								
Maine.....			1	3											1	81		
Maryland.....			2	52					1	45	1	13					1	17
Massachusetts.....			6	336	1	36			3	29	1	6			2	144		
Michigan.....			2	191					2	88	1	18						
Minnesota.....	1	7			1	162			5	663							1	3
Mississippi.....			1	14							2	253		62				
Missouri.....			1	103	1	152			4	108	2	7	1	27				
Montana.....																		
Nebraska.....													1	15	1	86		
Nevada.....																		
New Hampshire.....																		
New Jersey.....													1	21				
New Mexico.....																		
New York.....	4	104	5	103	6	241	1	4	15	444	16	680	2	64	1	52	1	7
North Carolina.....									1	2	1	14						
North Dakota.....																		
Ohio.....							1	4	5	96	1	3	1	33			2	27
Oklahoma.....																		
Oregon.....			1	40					2	404	1	150						
Pennsylvania.....											1	17						
Rhode Island.....									1	20								
South Carolina.....													2	165				
South Dakota.....									2	44								
Tennessee.....					1	639			1	4	2	127	1	104				
Texas.....											1	15						
Utah.....			1	40							1	100	1	7				
Vermont.....																		
Virginia.....											1	5						
Washington.....									1	120			1	100				
West Virginia.....			1	5					2	105			1	200				
Wisconsin.....													1	7				
Wyoming.....									1	16								
Alaska.....													1	156			1	117
Hawaii.....									2	58	1	150						

¹ Reported from ship in port city.

drinking eggnog from which a *Salmonella* organism was isolated.

Poultry and Eggs

Poultry and eggs were far more important than milk or water as sources or vehicles of infection. In 39 outbreaks, a large proportion of which were proved or suspected to be *Salmonella* infections, chicken or turkey, more often the latter, were proved or suspected to be the vehicles of infection. In a disease outbreak in a family group, eggnog was found to contain a type C *Salmonella* organism, and *Salmonella* infections in infants in many parts of the country were traced to a powdered egg yolk product. These reports very clearly indicate that fowl and eggs constitute a large reservoir of infection, and they emphasize the need for more effective measures to prevent transmission of infection to man.

Shellfish

Only one outbreak of 66 cases was reported in which raw shellfish were consumed. There was no definite proof of contamination of the raw clams eaten at a country club dinner, but no other source of infection for the outbreak could be found.

Types of Infection

Staphylococcal Food Poisoning

Laboratory evidence of the presence of a staphylococcus in food was available for 32 outbreaks of food poisoning, and epidemiological investigation indicated this type of food poisoning in 45 additional outbreaks. Of these 77 outbreaks, a cream-filled pastry was involved in 15; ham, in 21; turkey or chicken, in 10; and salads, in 10.

In 28, or approximately one-third of the 77 outbreaks, lack of or inadequate refrigeration was considered to have been a contributing factor. In 5, a food handler was found to have lesions or infections on his hand; in 3, a food handler had a throat infection; in 4, foodhandling procedures were considered unsatisfactory; and in 1, a dirty meat grinder was considered to have been the source of contamination.

These outbreaks were distributed as to place of occurrence or source as follows: schools and institutions, 26 percent; public eating places, 25 percent; banquets and picnics, 19 percent;

homes, 15 percent; and following purchase of food from bakeries, 15 percent.

Typhoid Fever

Eleven outbreaks of typhoid fever, consisting of 152 cases, were reported from 5 States in 1952, as compared with 3 outbreaks in 1951. In four instances, carriers, not previously known, had prepared food eaten by persons who became ill. In one of these occurring in a day camp, the camp cook was discovered to be a carrier through an examination of food handlers. Water was suspected of being the vehicle of infection in two outbreaks, but bacteriological evidence was lacking. Contaminated well water was shown to be the source of infection in two other outbreaks, and the use of polluted river water was demonstrated in another. In one family outbreak, no source of infection could be found. Milk was not suspected of being the vehicle in any typhoid fever outbreak.

Bacillary Dysentery

One of the 12 reported outbreaks of bacillary dysentery, or shigellosis, was considered to be milkborne, but none waterborne. These outbreaks, consisting of 1,441 cases, resulted in 13 deaths. In the milkborne outbreak, consisting of 639 cases in a school, epidemiological investigation revealed that pasteurization had been improperly carried out, but the source of infection of the milk was not discovered. One outbreak of 36 cases and 12 deaths in an institution was considered to be a person-to-person type of infection. Two outbreaks were considered to have been transmitted by food other than milk—in one instance, a tuna fish salad.

In 9 of the 12 outbreaks, *Shigella sonnei* type of infection was demonstrated, and a Flexner type of *Shigella paradysenteriae* was found in the remaining 3.

Salmonellosis

Outbreaks of salmonellosis in 1952 were reported to have occurred under a variety of conditions, namely, in a nursery for newborn infants; following banquets, church suppers, and picnics; in institutions and schools; in a jail; in private homes; and often following eating in restaurants. In 15 outbreaks, consisting of 597 cases and 2 deaths, *Salmonella* organisms were identified as follows: *S. typhimurium*, in

7; *S. oranienburg*, *S. heidelberg*, and *S. newport*, in 1 each; and an organism in group C, in 2. Five of these outbreaks followed ingestion of turkey or chicken meat, and in one, homemade eggnog was presumed to have been contaminated by raw eggs.

Sixteen other outbreaks, involving 738 cases, were reported in which laboratory confirmation of the diagnosis was lacking. In 14 of these, turkey or chicken meat was regarded as the vehicle of infection; 1 occurred in a nursery; and in the remaining 1, barbecued beef appeared to be the vehicle.

In addition to these outbreaks, cases of salmonellosis among infants with a history of ingestion of dried egg yolk were reported from many parts of the country. Early in November it was recognized that a few cases followed the ingestion of dried egg yolk processed by a single manufacturer. The first so recognized was in the District of Columbia, and soon after suspect cases were found in New York City. Presence of *S. montevideo* was demonstrated in the stools of sick infants and in samples of certain code numbers of the egg product. All State health officers were then notified to investigate and report any cases of salmonellosis coming to their attention. Contamination of the dried egg yolk was demonstrated throughout the whole range of production, which began about the middle of 1952. Sale of the product began in July and all unsold supplies were recalled in November.

Laboratory confirmation of diagnosis was obtained in over 50 such cases in 16 States and the District of Columbia. In an additional 40 cases laboratory evidence of infection was not mentioned in the report. These *Salmonella* infections were predominantly *S. montevideo*, but *S. barielly*, *S. oranienburg*, and *S. tennessee* were also reported. Nearly all cases were reported to be mild and there were no deaths.

Undifferentiated Gastroenteritis

In 50 outbreaks of disease, there was insufficient information to determine the type of infection. In 8 of these, water was considered to be the source of infection. In 1 outbreak, where creek water was used as drinking water, "a good many" cases were reported. In 2 outbreaks, 50 persons became ill after drinking water from

wells, investigation of which disclosed seepage from septic tanks; and in 2 others, faulty chlorination had preceded the outbreak.

Trichinosis

Five outbreaks of trichinosis were reported in 3 States. In 3 of the outbreaks, the patients had eaten partially cooked or uncooked pork, and in the fourth, 7 of 9 persons who had eaten bear meat developed symptoms 14 to 17 days after exposure. The bear meat had been in cold storage 10 days and then frozen.

Botulism

Only 2 small outbreaks of botulism were reported in 1952, 1 in California and 1 in Oregon. In one, in which 3 persons were ill and 2 died, home-canned mushrooms were involved. In the other, involving 2 persons, both of whom died, home-canned beets were found to be contaminated. Both groups of cases were caused by botulinus toxin type A.

Streptococcal Infections

Five outbreaks of streptococcal infection were reported, 4 of them involving 359 cases and no deaths and the fifth involving a "communitywide area." Epidemiological investigation of one group of 82 cases, which occurred in a hospital, indicated that the outbreak was foodborne, but the specific item of food was not identified. An outbreak in an institution for boys, in which 62 of 195 persons exposed developed the infection, was traced to a viridans type of streptococcus in raw milk. A group of 81 cases of streptococcal sore throat was reported among persons who had eaten warmed-over stew in a college dormitory dining room, which served about 600 persons. *Streptococcus viridans* was isolated from the purulent discharge from the thumb of a cook and from throats of the ill persons.

Outbreaks in Military Personnel

Sixty-nine disease outbreaks were reported in various units of the armed services stationed in continental United States in 1952. A total of 3,833 persons were affected. Thirty-seven, or more than half, of these outbreaks, were classified as food poisoning. One outbreak, involving 78 persons, was identified as bacillary

dysentery. Six, involving an unknown number of persons, were shown to be *Salmonella* infections. Others were reported merely as diarrhea or gastroenteritis. None of these outbreaks are included in the data given in the accompanying tables.

Other Disease Outbreaks

A number of disease outbreaks not attributed to food or water were also reported during 1952. These included diseases spread by person-to-person contact and those in which animals or arthropods were the source of infection.

Infectious Hepatitis

Outbreaks of infectious hepatitis reported in 1952 numbered 27. The 1,306 cases in these outbreaks, however, represent only a small fraction of the 17,200 cases reported in weekly telegraphic reports. The numbers reported in the outbreaks varied from a few to 200. Several of these outbreaks occurred predominantly in school populations or among college students; 2, in summer camps; 3, in housing developments; and 2, at Indian reservations or schools. Person-to-person contact was considered to be the principal mode of transmission. However, in one outbreak occurring on an island, nearly all persons affected were users of the same water supply. Another outbreak of 104 cases among persons attending a church camp was preceded by an epidemic of gastroenteritis. In this instance, it was clearly demonstrated by use of a dye that the spring water supply of the camp was contaminated by a leak in the sewer line from one cottage.

Diphtheria

In spite of the fact that diphtheria has shown a steady decline in incidence for many years, 8 outbreaks with 269 cases and 6 deaths were reported in 5 States and Territories in 1952. One small outbreak at an Indian reservation was characterized as an occurrence of "black" diphtheria. Seven cases with two deaths occurred in an institutional outbreak. One outbreak of 64 cases was confined to a single area of a city, and another was believed to have occurred because medical services provided in the community had emphasized curative rather than preventive measures.

Psittacosis

Several family outbreaks of psittacosis were reported. Two outbreaks of 3 cases each followed contact with sick parakeets in the home; another involved 2 persons. Outbreaks of the disease were also reported among workers in a poultry processing plant, and a group of three cases occurred among railway express employees who had contact with psittacine birds being shipped. Investigations indicated that pigeons and canaries were sources of infection of individual cases reported in various parts of the country.

Miscellaneous Diseases

Anthrax was reported in a large number of domestic animals, mostly swine, in the north central States early in 1952. Contaminated bonemeal was found to be the vehicle of infection. Two cases in humans for whom there was a history of contact with diseased animals or with the contaminated feed, and a number of cases in animals following vaccination against the disease were also reported.

Twelve cases of tularemia occurred in a family group as the result of contact with a wild rabbit. An outbreak of rickettsialpox occurred among persons living in an apartment, investigation of which revealed large numbers of house mice and mouse mites in the vicinity of the apartment incinerator.

Other outbreaks reported included ringworm of the scalp in a group of school children, encephalitis in the central valley of California, several groups of cases in which Coxsackie virus was regarded as the probable infectious agent, a small group of malaria cases in children attending a summer camp, trachoma at an Indian reservation, and a group of cases diagnosed as primary atypical pneumonia in an institution.

REFERENCES

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